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10/816,131

03/31/2004

Knut S. Grimsrud

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EXAMINER

HAILU, KIBROM T

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/816,131	<b>Applicant(s)</b> GRIMSRUD ET AL.	
	<b>Examiner</b> KIBROM T. HAILU	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicants arguments received on April 22, 2008 have been fully considered but they are not persuasive the references cited in the previous Office Action teach the claimed invention. Therefore, the finality of this Office Action is deemed proper.

The Applicants arguments on page 10 to 11 of the Remarks are not persuasive, and therefore, claims 1, 7, 11, 14, 18 and 22 are not patentable in view of the following disclosure.

**Regarding claims 7, 18 and 22**, the Applicants argue, “the second device being a fail over switch that provides two paths between the host and the first device” and “...utilizing the second path when the first path fails and notifying the host when switching between the paths occurred”. The Examiner doesn’t only disagree with the above Applicants' argument, but also the limitations do not disclose in the specification. The only discussion related to the above limitation is the phrase in the background of the invention, paragraph [0002], “A serial ATA (AT attachment) fail over switch (sometimes referred to as a “Port Selector”) is a component that may provide two paths to a device (e.g. storage device)”. Yes, the Applicants admit that the switch over provides two paths to the storage device. However, there is not explanation that the two paths are between a host and the storage device. As shown in Fig. 3, two paths, one path between the first host and device via the switch over, and another path between another host and the device via the switch over can be observed. Plus, the specification doesn’t indicate any failing of a path, switching to the other path, and notifies the switching to the other path. The specification only talks about notifying a host the presence of the fail over switch 306. Any thing added to the claims must be disclosed in the specification.

**Regarding claim 1**, the Applicants' argument that Burroughs doesn't disclose "the host detects the presence of the second device, in response to receipt of the second signal if the host is of a first set of hosts" is not persuasive because a host recognizes and acts in response to the confirmation signal 36 from the switch or medium 28. If for example, a switch over is occurred due to path failure and the switch sends a confirmation signal to initiating host(s), a first host responds to the confirmation of the switch over, and starts to send a wake command. If not, the host doesn't respond (or it ignores) the confirmation signal 36 (see col. 7, lines 5-21; col. 8, lines 19-32). In other words, the switch sends confirmation signal to all of the hosts. One of the hosts (first host) respond to the signal by sending wake command and the other host (second host) ignores the confirmation signal. And it is inherent for an external or incompatible host(s) to ignore a signal from a switch.

**Regarding claims 11 and 14**, the Applicants argue that Burroughs doesn't disclose "a host transmitting a COMRESET to a device coupled with a switch; the host receiving a COMWAKE originating from the switch,...". The Applicants argument is not persuasive because COMWAKE is simply a signal. As explained above, Burroughs discloses a signal, confirmation signal, received by the host originating from the switch or medium 28 (see col. 7, lines 13-16; col. 8, lines 27-30; col. 4, line 66-col. 5, line 4). Yes, the host also transmits the COMWAKE signal. But the Examiner doesn't equate this limitation with the signal transmitted from the switch to the host. In fact, the signal (COMWAKE) transmitted form the host to the device is another limitation, and is addressed appropriately.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7, 18 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

**Regarding claims 7 and 18**, the limitation, “the second device ... provides two paths between the host and the first device” recited in the claims does not disclose in the specification. The Examiner carefully reviewed the specification. However, the Examiner doesn’t find the above limitation. The only discussion related to the above limitation is the phrase in the background of the invention, paragraph [0002], and it says, “A serial ATA (AT attachment) fail over switch (sometimes referred to as a “Port Selector”) is a component that may provide two paths to a device (e.g. storage device)”. First, the Applicants already admitted providing of two paths to the storage device. Second, even though the specification indicates that the switch over provides two paths to the storage device, there is no explanation that the two paths are between the host and the storage device. If fact, looking at the closest Figure, Fig. 3, one path is between the first host and the storage device via the switch over, and the other path is between the second host and the device via the switch over, and Burroughs explicitly shows or discloses the same (see Fig. 1). Appropriate correction is required.

**Regarding claim 22**, the phrases, "...provides for a first path and a second path between the host controller and the serial ATA device, the second path to be utilized when the first path fails" and "the out of band signal notifies the host controller that a switch between the first path and the second path of the fail over switch has occurred" are not described in the specification. As explained above, there is no discussion about two paths between a host and the storage device. Additionally, although it is conventional, the Examiner doesn't find in the specification about switching between the first and second paths due to failing and notifying the host. Appropriate correction is required.

#### **DETAILED ACTION**

##### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-9, 11-12, 14-16, and 18-20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Burroughs et al. (US 7,111,158 B1).

**Regarding claim 1**, Burroughs discloses a method comprising: a host (126(1) or 26(2)) transmitting a first signal to a first device coupled with a second device (serial ATA device 24, e.g., disc drive) (Figs. 1, 3 and 4; col. 1, lines 35-36, the host transmits COMRESET signal such as 30(1)); in response to the first signal, the second device transmitting a second signal transmitted to the host prior to transmission of a third signal from the first device to the host

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(Figs. 1-4; col. 7, lines 5-26; col. 1, lines 33-38; col. 8, lines 19-37, explains communications medium 28 provides a signal such as 84 back to the host as a confirmation before the signal response 76 or COMINIT from device storage 24); the host detecting a presence of a second device, in response to receipt of the second signal if the host is of a first set of hosts (Figs. 1, 3 and 4; col. 7, lines 13-21; co. 8, lines 27-32; col. 4, line 64-col. 5, line 4; co. 8, lines 27-32, the initiating host receives signals from/through the communications medium 28. Note also that since the host receives a signal from the communication medium 28 in response to its initial message, understandably, the host knows the presence of the medium or switch 28); and the host ignoring the second signal if the host is of a second set of hosts (col. 7, lines 13-21; col. 8, lines 27-34 in combination with col. 1, lines 35-40, explain the confirmation message or signal from the medium 28 to one of the hosts is optional. Meaning, since it is optional, it is obvious that the host ignores the signal. Note also that Burroughs discloses a direct transmit and response between the host and the storage device without any signal coming back from a switch in between, see col. 1, lines 35-40).

**Regarding claims 7 and 18**, the claims include features corresponding to subject matter mentioned above in the rejected claim 1 except the second device being a fail over switch that provides two paths between the host and the first device, and Burroughs discloses the same (see Fig. 1-4; col. 7, lines 7-9; col. 8, lines 21-23). The claims are mere reformulation of claim 1 in order to define the corresponding machine-accessible medium and system. The rejections to claim 1 are applied hereto.

**Regarding claim 2**, Burroughs discloses the second device is a fail over switch (Fig. 2; col. 3, line 66-col. 4, line 2; col. 5, line 64-col. 6, line 1; col. 7, lines 6-11, 14-16...).

**Regarding claim 3**, Burroughs discloses the host transmitting the second signal to the first device (col. 1, lines 38-39, the host transmits the “comwake signal”); and the host receiving a second signal from the first device (col. 1, lines 39-40, the storage device 24 sends the “comwake signal” back to the host that initiates the communication).

**Regarding claim 4**, Burroughs discloses performed during a handshake initialization sequence between the host and the first device (col. 1, lines 29-36 in combination with col. 5, line 11).

**Regarding claim 5**, Burroughs discloses the second signal is a Serial ATA out of band (OOB) signal (col. 1, lines 31-35).

**Regarding claim 6**, Burroughs discloses the fail-over switch is a Serial ATA fail over switch (col. 1, lines 30-31).

**Regarding claims 11 and 14**, Burroughs discloses a machine-accessible medium that provides instructions that (Figs. 1-4, “communication medium”), if executed by a machine, will cause said machine to perform operations comprising: a host (126(1) or 26(2)) transmitting a COMRESET to a device (serial ATA device 24, e.g., disc drive) coupled with a switch (communication medium or switch 28) (Figs. 1, 3 and 4; col. 1, lines 35-36, the host transmits COMRESET signal such as 30(1)); the host receiving a COMWAKE originating from the switch (Figs. 1-4; col. 4, line 66-col. 5, line 4; col. 7, lines 13-16, explains communications medium 28 provides signals such as 36(1), 36(2), 84 and/or 104 back to the host); the host identifying a presence of the second device, in response to receipt of the COMWAKE (Figs. 1-4; col. 7, lines 17-21; col. 8, lines 30-34, explains after the initiating host receives a signal from the communications medium 28, the host sends a signal or a command through the communications



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medium 28. Note also that since the host receives a signal from the communication medium 28 in response to its initial message, obviously the host knows the presence of the medium or switch 28); the host receiving a COMINIT from the device (Figs. 1-4; col. 1, lines 37-38; col. 7, lines 22-26; col. 8, lines 34-37, “cominit signal” or signals 34, 76 or 86, and 96 or 106); the host transmitting the COMWAKE to the device (col. 1, lines 38-39, the host transmits the “comwake signal”); and the host receiving the COMWAKE from the device (col. 1, lines 39-40, the storage device 24 sends the “comwake signal” back to the host that initiates the communication).

**Regarding claims 8, 12, 16 and 20**, which inherit the limitations of claims 7, 11, 14 and 18, respectively, include the features corresponding to subject matter mentioned above in the rejection of claim 4, and is applicable hereto.

**Regarding claim 9**, which inherits the limitation of claim 7, includes the features corresponding to subject matter mentioned above in the rejection of claim 5, and is applicable hereto.

**Regarding claims 15 and 19**, Burroughs discloses the fail-over switch is a Serial ATA fail over switch (col. 1, lines 30-33).

**Regarding claim 22**, Burroughs discloses a system (abstract) comprising: a host controller (host 26) that initiates a handshake initialization sequence (Figs. 1, and 3-4; col. 1, lines 35-36); a serial ATA device (device 24) that participates in the handshake initialization sequence (Figs. 1 and 3-4; col. 1, lines 36-38); and a fail over switch communication medium or switch 24) that provides for a first path and a second path between the host controller and the serial ATA device (Figs. 1-4; col. 7, lines 7-9; col. 8, lines 21-23), the second path to be utilized when the first path fails, the fail over switch transmits an out of band signal to the host controller

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during the handshake initialization sequence, the out of band signal notifies the host controller that a switch between the first path and the second path of the fail over switch has occurred (Figs. 1, 3 and 4; col. 7, lines 5-21; co. 8, lines 19-32).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 10, 13, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughs in view of Grieff et al. (US 6,948,036 B2).

**Regarding claims 10, 13, 17 and 21**, Burroughs discloses the machine-accessible medium (28). However, Burroughs doesn't explicitly disclose the medium is one of an internal logic of a circuit and an internal state machine of a circuit.

Grieff teaches the medium (Fig. 1, "adapter") is one of an internal logic of a circuit and an internal state machine of a circuit (Fig. 1; col. 3, lines 1-10; col. 4, lines 49-66).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the logic and state machine of Grieff into the communication medium 28 of Burroughs in order to enable multi-initiator support for serial ATA drives (Grieff, col. 2, lines 38-42).

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kibrom T. Hailu whose telephone number is (571)270-1209. The examiner can normally be reached on Monday-Thursday 8:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. T. H./

Examiner, Art Unit 2616

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/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2616